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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,770	12/30/2003	Lucio Andrade-Cetto	MWS-097	1054

959 7590 06/09/2005

LAHIVE & COCKFIELD, LLP.
28 STATE STREET
BOSTON, MA 02109

EXAMINER	
BUI, BRYAN	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/749,770	ANDRADE-CETTO, LUCIO	
	Examiner	Art Unit	
	Bryan Bui	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-38 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 17-22 is/are allowed.

6)☒ Claim(s) 1,2,6,7,13-15,23,24,28,29 and 34-37 is/are rejected.

7)☒ Claim(s) 3-5,8-12,16,25-27,30-33 and 38 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6-7, 13-15, 23-24, 28-29, 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Toll, Lawrence R et al (US 20020146724), hereinafter Toll.

With respect to claims 1-2, 23-24,Toll teaches method, software and system for comparing biopolymer sequences using a Hidden Markov Model including data structure holding a representation of a hidden markov model , and populating (providing of) the markov model data with at least transition probability and emission probability (paragraph 0081); displaying more than one dimension of the probability data from the markov model (paragraphs 0073, 0149).

With respect to claims 14-15, 36-37, Toll teaches estimating programmatically the probability data prior to displaying the probability data and wherein at least one of the Baum-Welch algorithm, Viterbri training algorithm, (Expectation Maximization) EM algorithm, and custom algorithm are used to estimate the probability data (paragraph 0082).

With respect to claims 13, 34-35, Toll teaches every state in the model is displayed and wherein only a portion of the probability data is displayed (paragraphs 0073, 0082).

With respect to claims 6, 28, Toll discloses the system being modeled is a protein family sequence (paragraph 0038).

With respect to claims 7, 29, toll discloses the system being modeled is one of a speech recognition and a financial modeling system (paragraphs 0012, 0065).

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 13-15, 23-24, 34-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Menon et al (US 20040176879), herein after Menon.

With respect to claims 1-2, 23-24, Menon teaches system and method in transient fault detection includes Hidden Markov Model to provide information to user (figure 1) comprising: providing a data structure holding a representation of a Markov model for a system being modeled (figure 2); populating (providing of) the Markov model data structure with at least one of transition probability data

and emission probability data for the system being modeled (paragraphs 0035-0036); displaying more than one dimension (x, y) of the probability data from the Markov model (paragraph 0038).

With respect to claims 14-15, 36-37, Menon teaches estimating programmatically the probability data prior to displaying the probability data and wherein at least one of the Baum-Welch algorithm, Viterbri training algorithm, (Expectation Maximization) EM algorithm, and custom algorithm are used to estimate the probability data (paragraph 0032).

With respect to claims 13, 34-35, Menon teaches every state in the model is displayed and wherein only a portion of the probability data is displayed (paragraphs 0032, 0038).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6-7, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menon et al (US 20040176879) in view of Steeg (6493637)/ or Toll (200020146724).

Menon teaches the features of the claim invention which using hidden markov model in fault detection corresponding in speech recognition, except mention the system being modeled is a protein family sequence, and is one of a

speech recognition system and a financial modeling system. Steeg discloses a hidden markov model have use in both speech recognition and a financial modeling system (column 4, lines 62-65, and column 8, lines 40-47)/ or Toll discloses a hidden markov model in which the system being modeled is a protein family sequence (paragraph 0038), and Toll further disclsoes the system being modeled is one of a speech recognition and a financial modeling system (paragraphs 0012, 0065). It would have been obvious to one of ordinary skill in the art to modify Menon to include the application model as provided by protein family, and provides by one of a speech recognition and a financial modeling system as taught by Steeg or Toll in order to improve capability of the select applications.

Allowable Subject Matter

6. Claims 3-5, 8-12, 16, 25-27, 30-33, 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In combination with other limitations of the base and intervening claims, the prior art fails to teach the probability data is displayed as a heat map from displaying more than one dimension of the probability data from the Markov model; displaying a model state along a first dimension, an output probability field along a second dimension, and a probability measure as a third dimension; and displaying an exact value of a probability measure in response to a user input in heat map.

The following is a statement of reasons for the indication of allowable subject matter.

Claims 17-22 are indicating allowable over the prior art of record. In combination with other limitations of the claims recited, the prior art fails to teach or suggest the visualization function displaying the Markov model probabilities with three dimensions of data, wherein the display device displaying the three dimensions of data to a user.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Bui whose telephone number is 571-272-2271. The examiner can normally be reached on M-Th from 7am-4pm, and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BB

6/7/2005

BRYAN BUI
PRIMARY EXAMINER